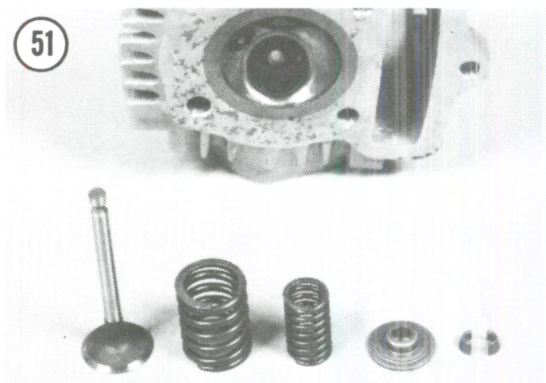


26. Install the recoil starter, fuel tank and seat/rear fender assembly.
27. Adjust the valves and cam chain tension as described in Chapter Three.

## VALVES AND VALVE COMPONENTS

### Removal

Refer to **Figure 49** for this procedure.



### CAUTION

When replacing valve parts on 1981 to mid-year 1984 ATC110 models, refer to **Cylinder Head and Camshaft Removal (90-125 cc)** regarding a special set of valve components that may have been installed on these models. Do **not** mix old valve parts with parts from a new valve kit that may have been installed by a Honda dealer. There are 2 punch marks on the top surface of the valve spring retainers in the **new** kit. All ATCs that have the new valve kit are identified by an "X" mark stamped directly under the engine serial number on the crankcase.

1. Remove the cylinder head as described in this chapter.
2. Compress the valve springs with a valve compressor tool (**Figure 50**). Remove the valve keepers and release the compression. Remove the valve compressor tool.

### CAUTION

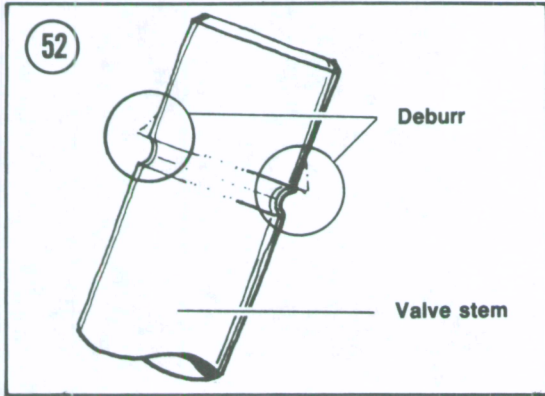
To avoid loss of spring tension, do not compress the springs any more than necessary to remove the keepers.

3. Remove the valve spring retainer and valve springs (**Figure 51**). Do not intermix the springs as the intake valve springs are different than those on the exhaust valve.

### NOTE

The inner and outer valve seats and valve stem seal will stay in the cylinder head. On some models there is only an inner valve seat on the exhaust valve.

4. Prior to removing the valve, remove any burrs from the valve stem (**Figure 52**). Otherwise the valve guide will be damaged.
5. Mark all parts as they are disassembled so that they will be installed in their original location.

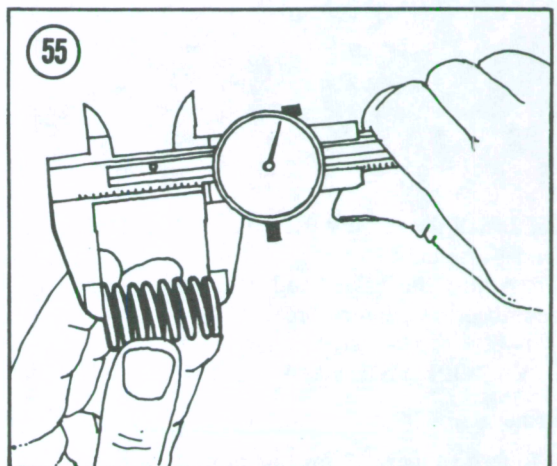
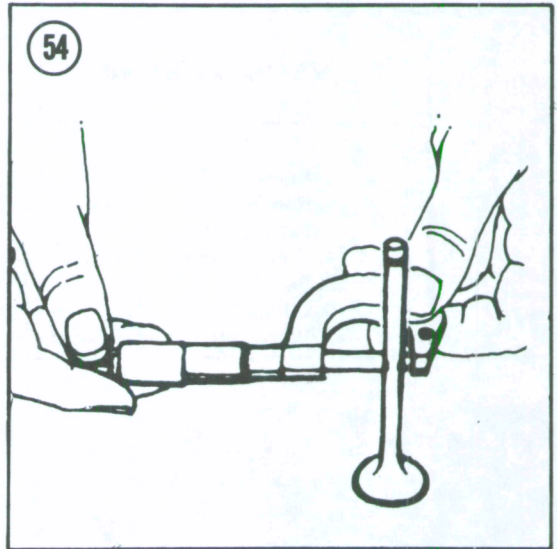
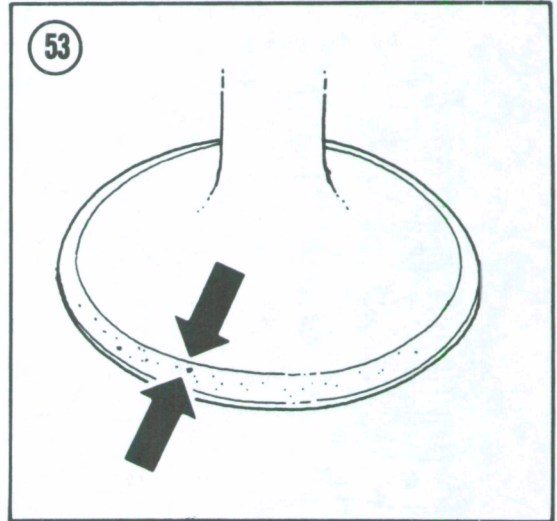


### Inspection

1. Clean valves with a wire brush and solvent.
2. Inspect the contact surface of each valve for burning or pitting (Figure 53). Unevenness of the contact surface is an indication that the valve is not serviceable. The valve contact surface *cannot be ground*; the valve must be replaced if defective.
3. Measure the valve stem for wear (Figure 54). Compare with specifications given in Table 1.
4. Remove all carbon and varnish from the valve guide with a stiff spiral wire brush.
5. Insert each valve in its guide. Hold the valve with the head just slightly off the valve seat and rock it sideways. If it rocks more than slightly, the guide is probably worn and should be replaced. As a final check, take the cylinder head to a dealer and have the valve guides measured.
6. Measure each valve spring free length with a vernier caliper (Figure 55). All should be within the length specified in Table 1 with no signs of bends or distortion. Replace defective springs in pairs (inner and outer).
7. Check the valve spring retainer and valve keepers. If they are in good condition they may be reused; replace as necessary.
8. Inspect the valve seats. If worn or burned, they must be reconditioned. This should be performed by a dealer or qualified machine shop.

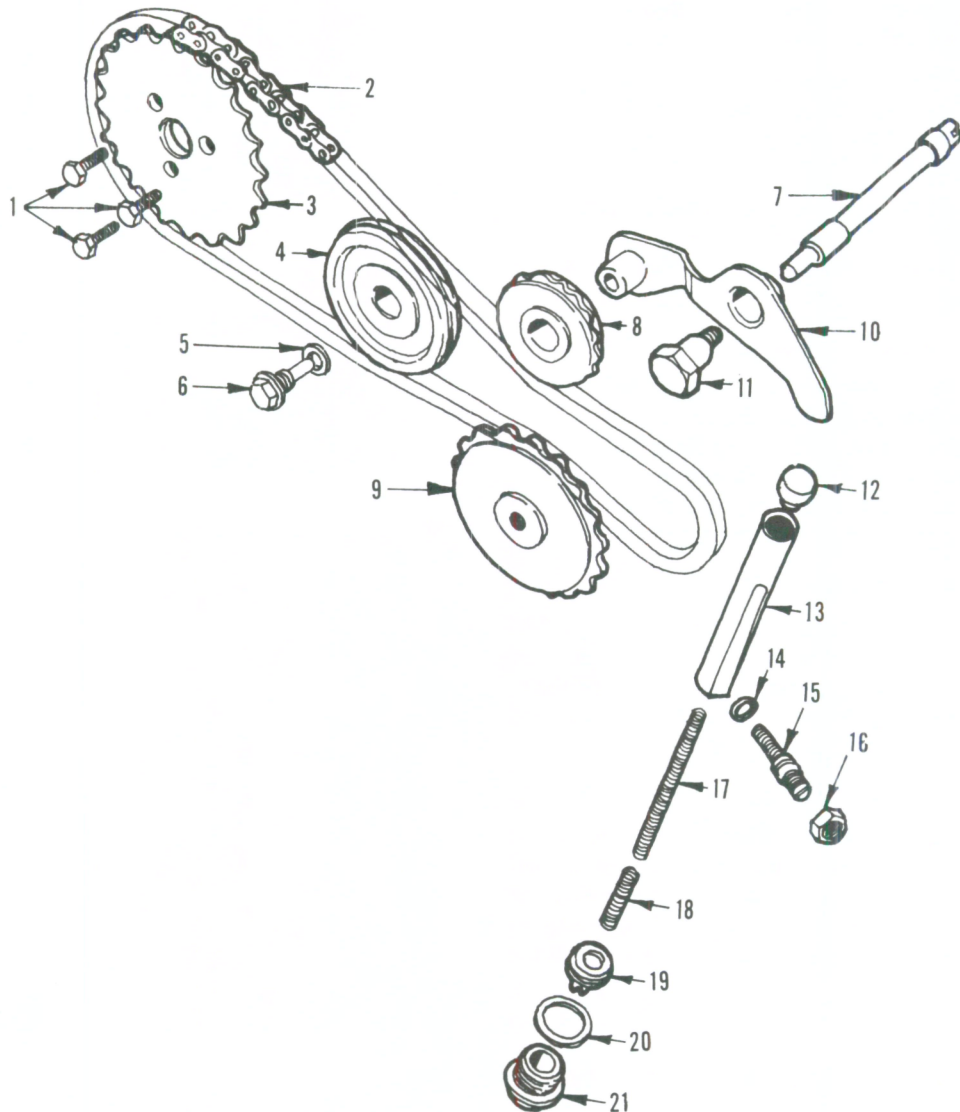
### Installation

1. Coat the valve stems with molybdenum disulfide grease. To avoid damage to the valve stem seal, turn the valve slowly while inserting the valve into the cylinder head.
- 2A. On 1982-on ATC110 and all ATC125M models, install the valve springs with their closer wound coils facing the cylinder head.
- 2B. On all other models, the valve springs are not progressively wound so they can be installed with either end facing the cylinder head.





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### CAM CHAIN TENSIONER (ATC70)

- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Bolt                     | 12. Pushrod head            |
| 2. Drive chain              | 13. Pushrod                 |
| 3. Sprocket                 | 14. Washer                  |
| 4. Roller (cam chain guide) | 15. Tensioner adjuster bolt |
| 5. Washer                   | 16. Locknut                 |
| 6. Guide roller pin         | 17. Tensioner spring "A"    |
| 7. Spindle                  | 18. Tensioner spring "B"    |
| 8. Roller (cam chain guide) | 19. Tensioner adjuster bolt |
| 9. Sprocket                 | 20. Sealing washer          |
| 10. Tensioner arm           | 21. Sealing bolt            |
| 11. Pivot                   |                             |

3. Install the valve spring retainer.
4. Compress the valve springs with a compressor tool (Figure 50) and install the valve keepers.

#### CAUTION

*To avoid loss of spring tension, do not compress the springs any more than necessary to install the keepers.*

5. After all springs have been installed, gently tap the end of the valve stems with a soft aluminum or brass drift and hammer. This will ensure that the keepers are properly seated.

### Valve Guide Replacement

When valve guides are worn so that there is excessive stem-to-guide clearance or valve tipping, the guides must be replaced. Replace both, even if only one is worn. This job should only be done by a dealer as special tools are required. If the valve guides are replaced, replace both valves also.

### Valve Seat Reconditioning

This job is best left to a dealer or qualified machine shop. They have special equipment and knowledge for this exacting job. You can still save considerable money by removing the cylinder head and taking the head to the shop for repairs.

### Valve Lapping or Grinding

Valve lapping or grinding the valves is not recommended as the valve face may be coated with a special material. Lapping or grinding the valve will remove this surface and will lead to almost instant valve failure. *Do not* lap or grind the valves.

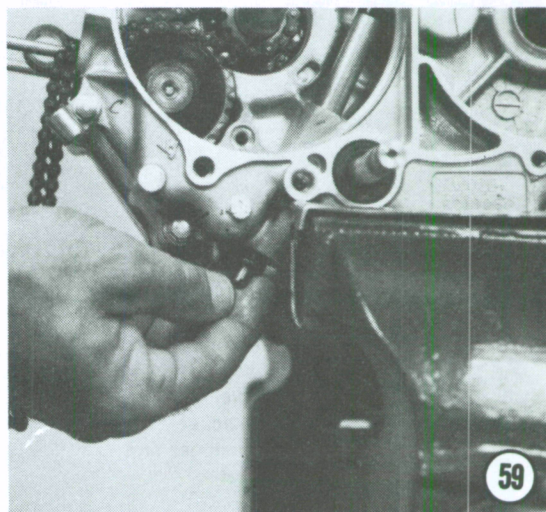
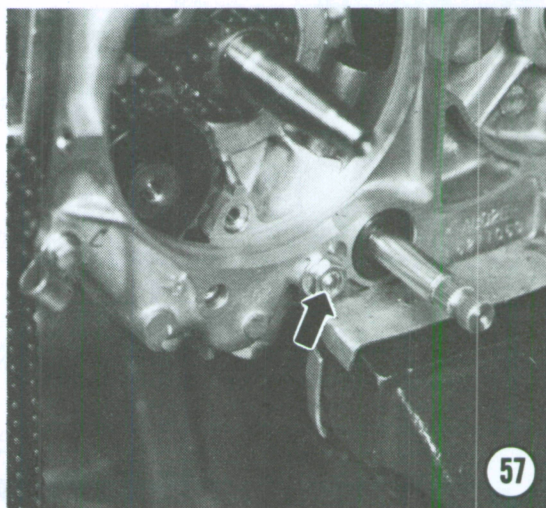
## CAMSHAFT CHAIN AND TENSIONER

### Removal/Installation (70 cc Engines)

This procedure is shown with the engine removed from the frame for clarity. All components can be removed with the engine in the frame.

Refer to Figure 56 for this procedure.

1. Remove the cylinder head and cylinder as described in this chapter.
2. Remove the alternator rotor and stator assembly as described in Chapter Seven.
3. Loosen the cam chain tensioner locknut and unscrew the adjust bolt (Figure 57).
4. Unscrew the sealing bolt (Figure 58) and, on models so equipped, unscrew the tensioner adjust screw (Figure 59).



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